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Governor Whitmer is taking action to support making Michigan a leader in widespread adoption of hydrogen energy, which will help clean up our air, generate significant new economic opportunity, and move the state toward its Healthy Climate goals.

Hydrogen is a safe and efficient alternative to fossil fuels. As a zero-emission fuel, hydrogen can help to decarbonize hard-to-abate sectors of the economy. Trucks, buses, steel production, and more could all greatly reduce greenhouse gas emissions by using hydrogen in place of conventional fuels

Hydrogen In Michigan

Efforts are already underway to expand the clean hydrogen market in Michigan with new producers, users, and technology manufacturers moving to the state. Michigan is determined to lead on this technology and to demonstrate the economic and environmental benefits of a hydrogen economy.

How Clean Hydrogen is Produced

Hydrogen is traditionally produced by separating the element from natural gas through a process which, if combined with carbon capture technology, can be a valuable source of low-carbon fuel. Producers can also use zero-carbon sources like nuclear energy or renewable energy (mainly solar and wind) to power the process of splitting water into hydrogen and oxygen. When recombined in a fuel cell, energy is released that can be turned into electricity to power anything from a car to a building. It's also possible to burn hydrogen just like natural gas, diesel, or jet fuel to generate the high temperatures needed to power certain industrial processes.

A Hydrogen Powered Future

Governor Whitmer's vision for clean hydrogen draws on the ingenuity of the people of Michigan, who have already demonstrated how clean hydrogen can reduce emissions and clean our air (see the discussion of Flint below). The efforts and projects outlined below are just some of the ways Michiganders are working together to advance and grow this new industry with the goal of ensuring that Michigan is a leader.

Innovation and industrial leadership have long been hallmarks of Michigan's economy and hydrogen represents a strong new tool for economic growth, environmental stewardship, and improving the health and wellness of Michiganders across the state.

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A Midwestern Hydrogen Refueling Network

Hydrogen is an ideal fuel for trucks and other heavy-duty vehicles as it provides long range and short refueling times. To facilitate widespread adoption, hydrogen stations will need to be built or added to existing truck stops. Efforts are already under way to create an initial network connecting Detroit with Chicago, Indianapolis, Louisville, Toledo, and other midwestern cities. This refueling network will support clean freight transportation throughout the Midwest. These hydrogen stations will be very similar to existing gas stations but could also include other technologies such as:

- On-site hydrogen generation and storage
- Electricity-producing fuel cells, potentially allowing each station to act as its own production/distribution facility
- Mini hydrogen-hubs, supporting the continued growth of the broader hydrogen economy.

Hydrogen-Powered Buses in Flint

In April 2023, the Flint Mass Transportation Authority expanded its fleet of hydrogen fuel cell buses using a $4.3 million grant from the FTA's Low and No Emission Vehicle Program, which is funded through the Bipartisan Infrastructure Law. These busses have reduced Flint MTA's consumption of diesel fuel by 99%, from 3 million gallons down to 30,000, cleaning the air and saving taxpayers money.

Hydrogen fuel cell buses not only reduce emissions, but they can also provide a smoother and quieter ride, travel longer distances with less refueling than diesel buses, and remain idle without contributing to air pollution.

Industrial Decarbonization

Hydrogen can also be used to further reduce the emissions released from the production processes of materials like steel, cement, and glass, which rely on high temperatures that are often achieved by burning fossil fuels.

Regional Clean Hydrogen Hubs

As part of the Bipartisan Infrastructure Law, the Department of Energy introduced the Regional Clean Hydrogen Hubs opportunity – a program awarding up to $1.25 billion each to 6-10 regional coalitions of hydrogen producers and off-takers.

Michigan's Role

- The state of Michigan is a participant in two of the 10 finalist hubs that the Department of Energy is considering – The Midwest Alliance for Clean Hydrogen (MachH2) and The Great Lakes Coalition for Clean Hydrogen (GLCH).
- These applications have the potential to bring up to $200 million in federal funding to the state, in addition to significant private capital.
- Key hub projects proposed within Michigan include fueling for hydrogen buses, trucks, and other freight vehicles, clean hydrogen production, and, potentially, underground storage facilities.